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# AVICULTURAL MAGAZINE



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## THE AVICULTURAL SOCIETY

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# AVICULTURAL MAGAZINE

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## The Avicultural Society

FOR THE STUDY OF BRITISH AND FOREIGN BIRDS  
IN THE WILD AND CAPTIVITY

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## SAVING THE GOULDIAN FINCH *Erythrura gouldiae*

by Sarah R. Pryke

What happens when the demand for suitable nest sites exceeds the supply? The law of supply and demand also applies in nature and the consequences of increased competition for the limited number of nest sites can have far-reaching effects. Which individuals will prevail and what happens to the unsuccessful competitors?

Hole-nesting birds frequently face a difficult task in finding suitable nesting cavities - most of the coveted nesting cavities are in old trees, which as a result of recent changes in land management (or often mismanagement) are increasingly few and far between. What can be done about this? Using a simple solution, helped by donations from the public, recent scientific management is dramatically reversing the shortage of nesting cavities available to the Gouldian Finch *Erythrura gouldiae* in the wild here in Australia.

The Gouldian Finch is arguably one of the most popular cage and aviary birds, bred by aviculturists throughout Australia, Asia, Europe and the USA. In stark contrast to the millions estimated to be living in captivity, the wild population has undergone a significant decline in the past 30-40 years and the Gouldian Finch is now one of Australia's most threatened bird species. In 1992, the Gouldian Finch was classified as Endangered, since when the population has declined further, to the point where most recent estimates suggest that there are fewer 2,500 birds remaining in the wild.

Obviously, urgent action needs to be taken to prevent us from losing this species in the wild. However, the success of any conservation strategy is ultimately dependent on understanding the processes contributing to the decline - which, unfortunately, in the case of the Gouldian Finch, we know very little about. New research, however, is providing clues and helpful ways in which we can, hopefully, begin to reverse this dramatic decline.

### **The problem**

#### **The limited number of nesting sites**

Several theories have been proposed to explain the recent decline of the Gouldian Finch population and its shrinking distribution. One of the most obvious explanations was the relatively large scale trapping of Gouldian Finches for the bird trade with, in some cases, thousand of birds being caught daily.

Trapping, which probably made a significant contribution to its decline, was banned in the early 1980s. Since trapping ended, however, the



populations of many of the other species that were trapped in similar numbers have successfully recovered, but the Gouldian Finch population has not.

In the early 1990s, another theory that received considerable attention concerned the high number of Gouldians infected by Air-sac Mite *Sternostoma tracheacolum*. Air-sac Mite, however, is a symptom, not a cause of highly stressed birds in poor condition which are, therefore, more susceptible to secondary infection by parasites. Around about the same time, researchers also began investigating the impact of changed grazing practises and wild fires, and since then have focused on how changed fire regimes have reduced the availability of important perennial grasses, especially in the late dry season, when seed from dominant annual grasses is no longer available.

Although this may partly explain the Gouldian Finch's declining numbers and decreasing health, unfortunately, the relative impact remains inconclusive at this stage. Given that the Gouldian Finch population has shown no sign of recovery in the past 10-15 years, it is regrettable that during that time very little research was conducted on the wild population.

This was where our research team from Macquarie University came in - during the past four years we have taken a different approach to the problem. Rather than simply asking whether Gouldian Finches have enough to eat, we have investigated other important aspects, such as whether they have enough places to breed successfully. This is important because recent habitat changes and inappropriate fire regimes not only alter seed diversity, but affect the current and future availability of suitable nesting cavities.

An important difference that sets the Gouldian Finch apart from other Australian finches is that it requires an existing tree hollow (cavity) in which to nest. This means that the number of available hollows determine and, thus limit, the growth of the Gouldian Finch population. This becomes a problem if the number of hollows or hollow-producing trees is limited, or if the available hollows are being used by other species.

With this in mind, we set out to study one of the largest known resident populations of Gouldian Finches, situated in the Eastern Kimberley region of Western Australia. Among the first things we noticed was that Gouldian Finches were difficult to find. After spending several months surveying as much habitat as possible, it became apparent that the number of breeding Gouldian Finches tended to correspond with the number of suitable hollows that were available in that area. We also noticed that there were large numbers of Long-tailed Grassfinches *Poephila acuticauda* in the same areas, which were using the available hollows for nesting. Therefore, one of our first priorities was to determine whether the number of Gouldian Finches was limited by the number of nest sites that were available and whether the

Long-tailed Grassfinches are preventing the Gouldians from breeding by occupying all or most of the potential nest sites.

To do this, we identified all suitable habitat and then set about the arduous task of climbing every single tree looking for Gouldian Finch and Long-tailed Grassfinch nests, as well as unoccupied but suitable hollows. We took detailed measurements of each hollow, including the depth, height, entrance size, orientation and the size of the tree. From this data, we could determine how many suitable hollows were available, which features the Gouldians prefer in nesting hollows, which features the Long-tailed Grassfinch prefer in nesting hollows, and whether the two species are likely to compete with each other for the same nest hollows.

The first thing we discovered was that the availability of suitable nest hollows varies considerably between different areas. This is because of the different ages of the eucalyptus trees in the different areas, with older trees tending to have more hollows than younger trees. Tree age in turn relates to recent changes in fire regimes.

Prior to the introduction of pastoralism in the nineteenth century the fire regime in Australia's northern savannahs consisted of a patchy mosaic of regular - early dry season - low intensity grass fires. More recently, however, as a result of increased pastoralism and a reduction of traditional land management, large areas are now susceptible to high intensity and late season fires. Whereas low intensity fires have a negligible effect on eucalyptus demographics, high intensity fires typically destroy saplings and older trees. The presence of cavities in eucalyptus woodland is strongly related to the size and age of the trees which, depending on the species, may need to be at least 80-120 years old. Thus, there are very few trees with hollows suitable for Gouldian Finches to nest in.

A second important aspect we discovered is that Gouldian Finches are very choosy about which hollows they will nest in, preferring very sturdy, deep hollows, with a narrow entrance. In contrast, Long-tailed Grassfinches will happily nest in a broad range of sites with little preference for one type over another. There is, however, a significant overlap in the range of hollows used by the two species, to such an extent that the hollows required by Gouldians are all potentially used by Long-tailed Grassfinches, but not vice-versa. This means that Gouldian Finches not only have a smaller subset of hollows to choose from, but they potentially face competition from Long-tailed Grassfinches for the hollows they wish to nest in.

At this point we still did not know the full story. We knew that Gouldian Finches have to compete with Long-tailed Grassfinches for hollows to nest in, but did not know how this competition plays out. So we set about finding out who would win the competition by conducting experiments with captive birds

at the Save the Gouldian Fund Research Facility at Martinville, New South Wales. By creating an even playing field, we could test whether Gouldians or Long-tailed Grassfinches were more likely to win access to the limited number of nest sites we provided. Multiple aviaries were set up to house equal numbers of breeding pairs of Gouldians and Long-tailed Grassfinches, which were each provided with half the number of nest boxes as there were pairs - a kind of musical chairs. The results were pretty astounding. The Long-tailed Grassfinches were the clear winners. They occupied more than four times as many nest boxes as the Gouldians.

As a follow-up, we decided to see what would happen if we gave the Gouldians a head-start, by allowing them to begin nesting before the Long-tailed Grassfinches were placed in the aviaries. Once again the Gouldians lost out. Gouldian Finches breeding in aviaries without Long-tailed Grassfinches produced more than three times as many fledglings as those with Long-tailed Grassfinches in them. This was because the Gouldians were continually harassed by pairs of Long-tailed Grassfinches trying to take over their nests. The results were similar when we filmed Gouldian Finch nests in the wild, where the Long-tailed Grassfinches out-competed the Gouldian Finches and sometimes even forcibly evicted them from their nests.

Therefore, Gouldian Finches face two major problems when breeding:

1. The limited number of suitable nest hollows and hollow-producing trees.
2. Intense competition for the limited number of suitable hollows, which are essential for successful breeding.

These are limiting the number of Gouldian Finches that are able to breed, with the result that only a small proportion of birds breed successfully and produce the young for future generations.

## **The solution**

### **Providing nest boxes**

Faced with the problems described above, the big question was - what could we do about this? Even if we were able to stop the uncontrollable wild fires and could replant the whole area with eucalyptus trees, it could take more than a century before the trees produce enough suitable hollows in which Gouldians can nest - and it seems unlikely that the declining population can wait this long.

A short-term solution that we came up with is to provide them with nest boxes. Over the past three years we have been hard at work building these specially designed nest boxes - modelled on the natural tree cavities used by

Gouldian Finches - and placing them in suitable habitat utilised by the birds. The idea is that we can increase the number of suitable Gouldian Finch nest sites (i.e. remove the constraints placed on them by the limited number of hollows) and reduce the effects of competition from Long-tailed Grassfinches (i.e. provide enough boxes for both species to breed successfully).

The results of the study have surprised even us. In just a few years, we have witnessed an increase of more than 200% in the breeding densities of Gouldian Finches in the areas in which we have placed nest boxes. By providing high quality predator-proof nest sites, the number of offspring each pair produces each breeding season has nearly doubled. Not only is this a great result for the conservation of the Gouldian Finch, but is evidence that the shortage of hollows was indeed restricting the growth of the Gouldian Finch population. A secondary benefit is that the nest boxes allow us easy access to the birds' nests and offspring and enable us to collect important additional data and gain a greater insight into the Gouldian Finch's reproductive biology in the wild.

*Dr Sarah R. Pryke is a Research Fellow at the Department of Brain, Behaviour and Evolution at Macquarie University, Sydney, Australia.*

The more boxes that can be built, the more nest sites the fund can provide for Gouldian Finches, to help boost the numbers of these iconic birds. It costs A\$35.00 (roughly £23.00/US\$35.00) to provide a nest box for a pair of Gouldians. For further details on how to sponsor a nest box or make a donation, members can visit the Save the Gouldian Website: <http://savethegouldian.org> or post a donation to: Save the Gouldian Fund, PO Box 147, Cooranbong, NSW 2265, Australia.

## SAVE THE GOULDIAN FUND

Funded by the Save the Gouldian Fund, researchers from Macquarie University have installed over 800 specially designed nest boxes in and around the research sites. To date, the fund has spent over A\$3.5 million (approx. £2.4 million/US\$3.2 million) on projects aimed at helping save the Gouldian Finch *Erythrura gouldiae* in the wild in Australia. It funds the NSW Research Facility and the Field Research Station based at Wyndham in the East Kimberley. Further funds will enable it to install nest boxes in all areas able to support populations of Gouldian Finches and move into new areas as fire management programmes expand. It knows the locations of current declining populations and its aim, if enough money can be raised, is to install large numbers of nest boxes which will help stabilise these populations.

## BREEDING THE WHITE-CROWNED ROBIN-CHAT

### *Cossypha albicapilla*

by Gary Bralsford

The White-crowned Robin-Chat *Cossypha albicapilla* is the largest of the 15 species of robin-chats of the genus *Cossypha*. It measures 9in-10¼in (23cm-26cm) in length. The sexes are similar in appearance with the male, at least in the case of *C. a. giffardi*, being larger than the female.

The nominant subspecies *C. a. albicapilla*, found in West Africa from Senegal and The Gambia to northern Côte d'Ivoire, has a conspicuous white crown and nape (the feathers start off with a very narrow black edge that gradually wears off), black cheeks and blackish upperparts, with the rump and tail orange-rufous, except for the central tail feathers which are black. There is a small area of black on the chin (which readily distinguishes it from the similar though smaller Snowy-crowned species *C. niveicapilla*), otherwise the underparts are orange-rufous. *Cossypha a. giffardi*, found from southern Burkino Faso to Ghana and Nigeria eastwards to north-western Cameroon, has a mainly black crown and nape with scale-like white edges to the feathers. A third, isolated, eastern subspecies *C. a. omoensis*, restricted to south-eastern Sudan and south-western Ethiopia, is also described as having scale-like white edges to the feathers of the crown and nape.

The White-crowned Robin-Chat inhabits the belt of savannah stretching across Africa from Senegal and The Gambia to northern Nigeria, Cameroon and beyond. It lives in dense thickets, gallery forest (bordering rivers, streams and swamps) and large overgrown gardens. It forages mostly among leaf litter on the ground, looking mainly for insects. It is shy and is more often heard than seen.

It has a melodious song (like that of the Blackbird *Turdus merula*), but also a harsh, monosyllabic call.

The nest is described as a slight cup of rootlets and leaves placed low down in a hollow in the top of a small tree stump. Two to three eggs are laid, which have been described as pale grey green, profusely blotched and spotted with reddish brown and ashy violet. However, those laid by my birds were a deep red, what I would call maroon, in colour.

I currently have five White-crowned Robin-Chats, three males and two females, from which I have formed two pairs. I originally purchased two pairs in 2009 from a well-known birdkeeper in north-east England, who had bred them in the past, but found that they kept throwing the chicks out of the nest. I later picked up an additional male from a birdkeeping friend from Liverpool who gave it to me because he had recently lost the female. He

told me that the male had been singing and pursuing the female for several weeks and attempting to mate with her, then one morning he found her dead, possibly exhausted by the constant attention of the male.

I decided to pair the male I had obtained from Liverpool with one of the females from the original two pairs. The previous owner had told me that one of the males was more prolific than the other, so I chose him. I placed this pair and the remaining original pair in 10ft x 4ft x 6ft high (approx. 3m x 1.2m x 1.8m high) aviaries at opposite ends of the garden. If the two pairs were housed too close to each other, they would constantly cling to the wire and call. The male's constant whistles could at times become annoying, especially as they began at 5.00am each morning.

In each of the aviaries I fixed up small, finch-type half-open-fronted nest boxes, as the previous owner said they would not entertain larger boxes. I suppose the smaller boxes must give them a greater feeling of confidence and security. I then placed coconut fibre, straw and animal hair in a basket in each aviary and left them to help themselves. A few weeks later, in April 2010, I noticed that some of the nesting material had been placed in a water dish. I looked in both nest boxes and found that a nest was beginning to take shape in the smaller of the two boxes. It seemed very strange that they should choose such a small box. A week later the nest was completed, but I was concerned that there was no material at the bottom of the nest. I pushed a small bunch of fibres down into the nest, but this was removed as soon as I turned my back on them. Thereafter, I left them alone.

I wanted to ensure that during the first few weeks of their lives the chicks developed strong legs and were able to grip properly. Those bred in the past by the previous owner had problems with rickets and splayed legs, but this could have been due to a lack of calcium in their diet and the absence of a multivitamin supplement.

The female sat on the clutch of three eggs - which was one more than had been laid in the past - for about 14 days. That day I noticed eggshells on the floor, having three days earlier began providing extra livefood in case the chicks hatched earlier. I provided lots of small/medium brown crickets which I hoped the pair would feed to the chicks.

When I inspected the nest I found it contained two chicks and the remaining egg which was beginning to chip. When I returned at 9.00pm (21.00hrs) the two chicks and the egg were on the floor. There was no sign of blood and the chicks appeared uninjured and, strangely, looked to have been deliberately placed side by side on the floor. I placed them back in the nest in the hope that the birds would return to them, but when I checked early the following morning, they were back on the floor - only this time the chicks were dead - they had been battered and were covered with blood.

Two weeks later the pair went to nest again, but the same cycle of events happened. I wondered whether the male was highly charged and wanted to mate again. Therefore, when a third clutch of eggs was laid I removed the male when they had been incubated for 12 days. The female returned to the nest and continued to incubate the eggs.

The chick hatched after the usual incubation period of 14 days and I placed lots of small crickets and waxworms in a tub ready for the female to feed to them. I decided against providing mealworms as these sometimes over stimulate the birds and result in them turning their attention to displaying and mating, rather than concentrating on rearing their young.

I was on holiday at the time, so was able to keep an eye on what was happening. The female threw the two chicks out of the nest. Both were still alive, so I warmed them by holding them in my cupped hands and breathing on them. When they began to show signs of life, I placed them back in the nest. Within an hour, however, the female removed them again and placed them neatly side by side on the ground. So it was not the male (who was housed on the other side of the garden), but the female who was to blame.

During the first day I placed them back in the nest a total of five times until, at about 8.00pm (20.00hrs), the female eventually began to brood them. She continued to brood them and feed them for the following 14 days, by which time they were ready to fledge. They were noticeably smaller than their parents and still had small tufts of down on the crown.

I placed some small branches at ground level for them to perch on to ensure the continued development of their legs and feet. Their legs looked strong and their feet were perfect, so the calcium I had put on the livefood seemed to have paid off and the lack of nest material in the bottom of the nest did not really matter. The chicks grew rapidly and five days after they fledged were able to fly up to the feed buckets. One of the youngsters was more advanced than the other and tried, unsuccessfully, to join its mother on the top perch. She was very protective towards them, which surprised me, considering that she had thrown them out of the nest several times. At 31 days old they were feeding themselves and able to move around the aviary with ease. Except for some streaking on the belly, their plumage was indistinguishable from that of the adults.

I separated them from the female when they were 45 days old. There had not been any aggression towards them, but I feared the youngsters' progress might be hampered if they remained with her for too long.

I was less successful with my second pair of robin-chats which threw out two broods of young. I even removed the male again because I thought he was responsible, but once more found that it was the female who was throwing out the chicks. I again kept replacing them in the nest, but she

refused to brood them or feed them and kept throwing them out of the nest and eventually made sure that they were dead.

I had read that a pair at Exmoor Zoo had also thrown the chicks out of the nest and the third clutch of eggs had been artificially incubated and a chick hand-reared. (Details of this, along with photos of a nest and egg, the chick aged approximately five and seven weeks of age, the hand-rearing record and a graph plotting the chick's growth rate, were published in Vol.116, No.1, pp. 30-34 (2010) - Ed.)

This year I plan to try removing the male when the first clutch of eggs is laid and see if the female can rear the chicks on her own without any setbacks.

*Gary Bralsford, who lives in Yorkshire, was the first person in the UK to breed the Chestnut-backed Thrush *Zoothera dohertyi* and has also bred the Magpie Shrike *Corvinella melanoleuca* and a number of other species of softbill. E-mail:gary.bralsford@hotmail.co.uk.*

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## IMPORTANT NOTICE

Members are reminded that the annual subscription became due in January. Those who have not yet renewed their subscription are asked to do so without further delay. The 2011 subscription, £21 in the UK and £24 overseas, should be sent to the Hon. Secretary and Treasurer, The Avicultural Society, Sheraton Lodge, Station Road, Southminster, Essex CM0 7EW, UK. Members who paid by automated debit at the old rate are asked to remit the outstanding balance to the Hon. Secretary and Treasurer.

Those who prefer to pay their subscription in US dollars can send a check or money order, US\$40 for receiving the magazine by regular mail or US\$50 by air mail, to The Avicultural Society, c/o Jane Cooper, 12650 Hearst Road, Willits, California 95490-9231, USA. All checks and money orders should be payable to The Avicultural Society.

Owing to the increased cost of producing the magazine and the recent increase in postal charges the next magazine (No.2, 2011) will only be sent to fully paid-up members.



## BREEDING BEWICK'S SWAN *Cygnus columbianus bewickii* AT FLAMINGO GARDENS AND ZOOLOGICAL PARK

by Christopher Marler

Bewick's Swan is the smallest of the white swans. It has a black and yellow bill, similar to that of the Whooper Swan *C. cygnus*, but is a much smaller bird. The size difference becomes quite apparent when they are seen together.

We have kept Bewick's Swans in our collection on and off for many years and in the 1970s bred it regularly. However, this was very much down to one particular female who bred most years. When she passed away in the early 1980s, we gave up most of our swans and it was only recently that we were able to develop a new breeding area nearer the house, where we maintain a smaller collection of waterfowl, including my favourite swan - Bewick's.

We obtained a one year old pair of Bewick's Swans from Ludger Bremehr's waterfowl breeding farm at Verl in Germany. The pair settled in well kept with Emperor Geese *Anser canagicus* and Black Brent Geese *Branta bernicla* in two large pens with plenty of water.

In the spring of 2010, the Bewick's Swans began to become aggressive towards the geese and were showing signs of gathering nesting material consisting of grass and twigs. The swans were, therefore, allowed the smaller of the two pens to themselves.

The nest was completed under a small tree at the highest part of the pen. In May, the first egg appeared and, as the female was very protective of the nest, we kept well away. Four further eggs were laid. The female began to incubate the five eggs while the male kept guard. They were fed close to the nest twice a day, with the male standing guard ready to chase us when retreating with our back turned.

The incubation period is 30 days, the shortest of all the swan species. Three healthy cygnets hatched, but the last two eggs were infertile. As it was 30 years since we had last bred this species, we did not want to take any chances with our three delightful cygnets, so decided to remove them and hand-rear them.

The three young swans are now over nine months old and we have had them sexed and found that we have one male and two females. Hand-reared Bewick's Swans become remarkably tame and are a real delight.

The Arctic breeding swans have always held a high priority in our collection and in 1974 the International Wild Waterfowl Association presented us with its Outstanding Breeding Award for being the first in the world to breed the four Arctic nesting swans, viz: the Whooper, Bewick's,



The author (the society's chairman) with one of the cygnets at three weeks of age.

Whistling *C. c. columbianus* (the two together known now as the Tundra Swan) and Trumpeter Swan *C. buccinator*. It is an award of which we are justifiably proud.

*Flamingo Gardens and Zoological Park, Weston Underwood, Olney, Buckinghamshire, UK, is no longer open to the public, but is maintained now as a private collection.*

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## PENGUIN BEACH

ZSL London Zoo is opening a new penguin exhibit called - Penguin Beach - which will consist of a new pool, viewing area and underwater viewing tank and will house more than 100 Macaroni *Eudyptes chrysolophus* and Humboldt Penguins *Spheniscus humboldti*.

## THE CARE AND BREEDING OF THE PEKIN ROBIN

### *Leiothrix lutea*

by Christopher Dunn

The Pekin Robin (or Red-billed Leiothrix) is a small passerine belonging to the Old World babbler family Timaliidae. It is found in south-east Asia, from the Himalayas to south-east China. Its preferred habitat is thick forest, often bamboo or coniferous, with smaller species of shrubs growing amongst them. It tends to stay close to ground level, much like our own Eurasian Robin *Erithacus rubecula*, but unlike true robins may be found in medium-sized flocks outside the breeding season and only becomes territorial while breeding.



Christopher Dunn

There is a slight difference in coloration between the male (right) and female (left).

Its diet, which consists largely of small berries and invertebrates, varies with the seasons, being skewed towards invertebrates when it is breeding and more towards fruit and plant matter outside of the breeding season. Many Pekin Robins will consume seed, however, their ability to digest this remains questionable and, as with many other softbills, it is likely that it passes through the body largely undigested.

Despite what is stated in many books about the inability to visually sex

Pekin Robins, this is untrue, however, to rely solely on visual sexing is, at best, unwise. Adult males have a deep red/brown breast which is often enlarged in size and deeper in colour than that of the female or juvenile. Likewise, the white eye-ring of the male is often larger than that of the female and the olive green feathers of the head are deeper in colour. Although this is unhelpful when attempting to sex an individual adult or juvenile, if you place an adult male next to an adult female, this difference becomes obvious.

A far more accurate and reliable method of sexing them is to listen to their song. The male has a melodic song very similar to that of our native Blackbird *Turdus merula*, whereas the female's call is a simple "tee-tee". Juveniles often begin to sing at about four weeks of age and, at this early age, the only reliable methods of sexing them are by their song and DNA sexing. To induce them to sing, simply take a pair or a group of birds and separate them and place them out of sight of each other but within earshot of one another. It often takes only a few minutes before they begin to sing and betray their sex. DNA sexing is simply a matter of catching the bird (or birds) and obtaining a blood sample from above a toe nail or from between the scales of a toe. Only a minute drop of blood is needed for testing and, if it is taken from a toe, the bleeding will cease almost instantly. However, by the time the results arrive the bird or birds will often have revealed their sex by singing, perhaps within seconds of being released back into the aviary, as my own birds did.

The aviary set-up is often a make or break point for successful breeding - get it wrong and they will not breed. The bigger the aviary is the better - it should not be smaller than 6ft x 6ft x 6ft (approx. 1.8m x 1.8m x 1.8m). Height is not of great importance for, as I mentioned earlier, they tend to stick to the undergrowth. Extending either or both of the other dimensions, however, is likely to prove beneficial. The floor of the aviary works better for planting if it is left as bare soil, however, this means that mice and even rats can dig their way in. This can be overcome by laying down a brick foundation around the perimeter, then digging out the soil and concreting the floor, then backfilling it with soil and/or compost ready for planting. Alternatively, the floor of the aviary can be wired over. You will need to use 1in x ½ in (25mm x 13mm) mesh to keep out rats, ½in x ½in (13mm x 13mm) mesh to keep out adult mice and ¼in x ¼in (7mm x 7mm) mesh to keep out all mice (young and old). The aviary wire needs to be of the same gauge mesh and there must be no gaps around the doors or elsewhere to make it completely mouseproof. It is much easier to mouseproof an aviary when you are building it rather than trying to mouseproof an existing aviary. Ideally, the roof should be covered to prevent the chicks from getting soaked when it rains and to prevent the likelihood of diseases being passed on from

the droppings of wild birds. Wooden roofing, although effective, reduces the amount of light in the aviary, so should be avoided or, at least, not used to cover the entire roof. Corrugated plastic or Perspex/Plexiglas sheeting works well and allows in the light to encourage plant growth. To shelter the occupants from the prevailing wind, the sides of the aviary should be screened using climbing plants, conifers, or polythene or Perspex/Plexiglas if the light is limited. This will also prevent rain from blowing into the aviary, which can be fatal to chicks. Adjacent aviaries housing pairs of Pekin Robins may need to be screened during the breeding season to prevent fighting through the wire mesh. This, however, varies from pair to pair and some pairs do not bother at all. Direct sunlight should be allowed into the aviary either by having a removable plastic sheet on the roof or, more likely, through one of the side panels of the aviary. UV light is essential for vitamin D<sub>3</sub> synthesis.

Plants are of great importance. I plant tall plants such as conifers and bamboos towards the back of the aviary and small bushes towards the front. I position perches at either end of the aviary with a large flying space between them and, using natural branches, vary the thickness to exercise the birds' feet. Climbers not only help screen the birds from wind and rain, but also provide foraging and nesting places. Russian Vine *Polygonum baldschuanicum* grows extremely rapidly and provides excellent cover. Hops *Humulus* spp. provide seasonal cover and attract insects which the birds will feed on, but die back to root level over winter. Clematis are also useful plants though they can be slow growing. Grape vines *Vitis vinifera*, the Kiwi or Chinese Gooseberry *Actinidia chinensis* and climbing roses *Rosa* spp. also work well in attracting insects and even provide fruit. Once all the planting is done, I find that bark chippings are an excellent floor covering. They retain moisture around the roots of the plants, prevent water logging, provide foraging opportunities for the birds and are easily hosed down.

Pekin Robins can be housed with a variety of species including turacos, weavers, finches, quail, zosterops and budgerigars. However, not all of them are suitable companions for Pekin Robins when they are nesting. Turacos constantly bouncing from branch to branch are likely to prevent successful breeding, weavers become territorial and steal nesting material, as do almost all finches and, in the process, often destroy nests. Likewise, budgerigars will play with nests and, in doing so, dismantle them. Zosterops go quite well with Pekin Robins and require a similar diet, however, if anything, the Pekin Robins are likely to dominate the zosterops and this, in itself, may become a problem. I have housed Indian Silverbills *Lonchura malabarica* with Pekin Robins and both species have bred successfully. Large perching quail will disturb nests and may even attack fledglings, but Chinese Painted



Christopher Dunn

**The average clutch consists of two to four eggs, but my birds frequently lay clutches of three eggs.**

Quail *Coturnix chinensis* and Pekin Robins have gone together well in my aviaries. The quail have not harmed any fledglings and the Pekin Robins have not troubled the quail chicks.

The maintenance diet for Pekin Robins should consist of a variety of fruits including apple, pear, pomegranate, cherries, plums, grapes, blackberries, currants, figs, kiwi fruit, etc. Blueberries, in particular, are adored. Some varieties of avocado are toxic to birds, particularly parrots, and should not be risked. A commercial softbill food, rather than an insectivorous mixture, should form the staple diet - any of the fruit purée mixtures work well. Livefood should be strictly limited or not offered at all. The food should be dusted with a calcium supplement such as Calcivet or Insect Essentials, or this should be added to the drinking water. A colouring agent can be added to the food during the moult, but this is not essential.

The breeding diet is slightly more complicated with the general idea being to increase the protein level. The amount of fruit can be reduced and the amount of livefood, such as crickets, waxworms and mealworms, increased. This should be dusted with Insect Essentials or an equivalent supplement. I have tried various other preparations, however, none of these have been potent enough for the purpose of rearing chicks successfully. Soaked dog biscuits can be offered and the staple softbill mix can be switched from a

*Christopher Dunn***A brood of three nestlings.**

frugivore mix to an insectivore mix. Calcivet or other liquid calcium should be added to the drinking water to guard against egg binding.

The parent-rearing diet consists of livefood and a good calcium balancer and multivitamin preparation. The parents feed the chicks entirely on livefood and it is imperative that it is sufficiently well dusted with Insect Essentials or an equally good calcium/mineral powder, otherwise chick losses are almost inevitable. Vitamin B is of particular importance for proper development of the nervous system and a lack of it will result in poor brain development and death. The give away signs are the eyes open late, and head rolling after fledging, ultimately resulting in death. Livefood should be placed in a smooth-sided bucket with a small twig at an appropriate angle halfway up the bucket on which the birds can perch. Each day the sides of the bucket should be wiped clean to prevent the crickets from climbing up the sides and escaping. When the chicks hatch, white-skinned mini mealworms and Size 3 crickets should be provided, then Size 4 and even Size 5, as the chicks grow older. From about three to four days of age the chicks should be large enough to begin taking small waxworms and white-skinned regular mealworms. As the chicks increase in size, the size and number of waxworms can be increased and, by the time the chicks fledge, they should be capable of eating regular mealworms. Impaction is a risk when chicks are being

reared and the best way to avoid this is to offer only soft-bodied insects and to avoid offering overly large insects. Although waxworms have a soft abdomen, they have a hard chitinous head, so should be avoided during the first few days of the chicks' life. As the chicks grow larger, the digestive tract expands and the gut flora increase, allowing them to deal with larger insects with harder body parts. About two weeks after fledging, fledglings should be beginning to pick up food. A piece of ripe pear with juice running down it, pushed through the wire mesh near the end of a perch, will often attract their attention and encourage them to feed. When you are sure that they are feeding themselves, the amount of livefood can be reduced and the amount of fruit increased, and they can be offered a commercial softbill (maintenance) diet.

My hand-rearing diet is an adaptation of the 50/50 ratio pinkie mice and papaya diet told to me by Johnpaul Houston. However, as neither of these were readily available to me, I replaced the pinkie mice with an egg (a complete protein rich diet in itself) and the papaya with pear. A hand-rearing formula is also necessary, which is used in a very watered down state and offered in tiny amounts during the first 12 hours to provide water and electrolytes and prevent dehydration. To prepare the main hand-rearing diet, I crack an egg into a cup and add 25%-50% water. I then mix these together thoroughly with an equal quantity of pear that has been peeled and from which the core has been removed and the pear mashed. This is then placed in a microwave and heated until the egg white has solidified locking in the water content. It is then dusted with hand-rearing formula until any excess water has been absorbed (usually ½-1 scoopful, using the scoop provided, is sufficient to do this, otherwise it is necessary to try to reduce the quantity of water in the egg mixture). I then mix in a teaspoonful of Insect Essentials or an equivalent. The mixture can be kept for about a day in a refrigerator. It is important; of course, to warm it to body temperature before offering it to the chicks. If the hand-rearing formula is added before the cooking process, cooking will likely denature a number of enzymes in the formula designed to aid digestion, which could have disastrous consequences. Therefore, it is important not to add this until after the cooking process. Likewise, cooking could destroy or break down some of the vitamins in the multivitamin supplement so, this too, should not be added until after the cooking process has been completed. It is also important to remember that if the mixture is watery it may pass down into the lungs and cause aspiration and death. One of the great things about using an egg is that the albumin protein will take on water and solidify it when cooked, almost entirely eliminating the possibility of aspiration yet still providing sufficient water for the chick. We lost a number of chicks when attempting to rear them solely on the hand-rearing



formula and, in retrospect, it seems likely that the cause was aspiration.

Caring for Pekin Robins outside of the breeding season is a relatively simple matter. Pairs can be housed together in small flocks, although at first (immediately following the breeding season) it is advisable to keep a close eye out for aggression between pairs. Screening between aviaries should first be removed to allow pairs to see each other and interconnecting doors can be opened to allow pairs to mingle, once it is deemed safe to do so. A bird that is still in breeding condition has a bright red bill, whereas the bill of a bird that is no longer in breeding condition turns black at the base. Towards the end of the breeding season birds should be switched back to the maintenance diet (described earlier) and should have been on this diet for several weeks in readiness for being housed together. Over conditioning and aggression in birds, particularly males, is often the result of excessive protein in the diet, hence the importance of a low protein diet outside of the breeding season. During this period young birds will begin to pair up. They can either be placed together and allowed to choose their own mate, which often produces the best results, or paired up specifically for genetic purposes, which will not necessarily yield the desired results, as some birds simply do not click, no matter what you try. As the breeding season approaches, from about March onwards the birds should be switched back to the breeding diet. As the birds come into breeding condition, pairs will begin to separate from the flock and singing will increase both in length and frequency amongst the males. Bill clicking will also occur and is an early sign of aggression between pairs. Once these behaviours are noticed pairs should be moved back into their breeding aviaries.

Caring for Pekin Robins when they are breeding is a most interesting time. Some pairs are extremely tolerant and you can help them feed their chicks and they will not mind, other pairs will kill their chicks and toss them out of the nest, if you so much as look at them. Coconut fibre, shredded paper, straw and small, thin twigs, can be provided as nesting material. A pair will often pick a spot close to the ground that has no supporting branches or twigs. When this happens a circular wire frame, with two crossed wires forming the cup-shaped base, can be made and attached to provide a nest support which, with luck, the pair will accept and use to support the nest and keep it in place. Or, pairs will often build a substantial base, which can be over 1ft (30.5cm) tall, before finally constructing the nest cup at the top. When the nest is completed the pair, or usually the female more so early on, will spend time sitting in the nest. Frequently the first egg is laid just a few days later. The average clutch consists of two to four eggs. However, although my birds have frequently laid clutches of three eggs and, occasionally have laid two eggs, so far they have never laid four eggs. The eggs are quite large for the

size of the bird and are blue in colour with red/brown mottling. Incubation usually begins after the second egg is laid. The incubation period is usually 14 days, though oddly enough, I had a pair whose eggs consistently hatched after 12 days. About two days prior to the expected day of hatching livefood should be provided ready for the parents to feed the chicks - the last thing you want is for the chicks to hatch and be thrown out of the nest because there is not enough suitable livefood available with which to feed them. Often all of the eggs hatch on the same day, however, the last egg to be laid may not hatch until the following day. The youngest chick is frequently smaller and weaker and often, though not always, perishes. Three chicks will polish off about 2,000-3,000 crickets during the first week, dropping off to about 2,000 or so crickets during the second week and remaining steady at this amount until the chicks are weaned. Their eyes begin to open at about five to six days of age. If they open any later it is an indication of a Vitamin B deficiency. If they do not open until a day or so before the chicks fledge at 11 days of age, it is almost certain that they will not survive. The danger period for fledglings is at about 11-14 days of age - if they make it past this stage the signs are good. It is essential that aviaries are kept wind and rain-free during this critical period. Water dishes and ponds/pools are also potentially lethal and should be emptied or the water reduced to a depth of 1cm (not quite  $\frac{1}{2}$ in), by placing gravel or pebbles on the bottom. Any other water sources should also be made safe. By 15 days of age fledglings are likely to be feeding themselves and the female is likely to have laid a further clutch of eggs. Once it is certain they are feeding themselves sufficiently well, the time has come to remove them, as the male will often become aggressive towards them at this age. Even if this does not occur, when the second clutch hatches there will be competition for food and this is best avoided if the young of the second clutch are to thrive.

Should problems occur, such as chicks being tossed out of the nest or not being fed properly, it may be necessary to hand-rear them, which is not a task to be taken on lightly. Advanced chicks can continue to be reared on the parent-rearing diet or switched the hand-rearing diet. If crickets are being used, it is important to remove the legs before feeding them to the chicks and to avoid offering them overly large items of food. Chicks need to be fed every two hours and should be fed until they stop begging for more. Depending on the age of the chicks, some form of heating is likely to be required. For advanced chicks whose feathers are emerging this can be a simple desk lamp or heat mat. Naked chicks require a brooder set at about 35°C (95°F) and 50% humidity. The temperature can be lowered to 34°C (93.2°F) as the chicks' pin-feathers begin to emerge and can continue to be lowered by one degree each day thereafter. If the temperature is too

high the chicks will become restless. The humidity also needs to be reduced gradually as the chicks feather up. If it is too high it can cause respiratory problems as well as provide a breeding ground for bacteria.

I once had to artificially incubate two eggs and hand-rear the resulting chick. The pair was continually tossing its eggs out of the nest, probably due to mice. So two of the three eggs were removed and incubated at 37.5°C (99.5°F) and 60% humidity. The third egg was left with the parents in the hope that they would hatch it and any chicks hatched in the incubator could be returned to the nest to join it. However, the egg was tossed out of the nest a day later and those in the incubator began to hatch after only 12 days. One chick died in the shell but the other hatched successfully and was fed for the first 12 hours with drops of watered down hand-rearing formula. The temperature in the incubator was reduced to 35.5°C (95.9°F) and the humidity was reduced to 50% and it was used as a makeshift brooder. The chick was placed in a 'nest' of tissue paper, supported in an egg carton. The first faecal sac was produced after approximately 12 hours. The chick was then fed small amounts of hand-rearing egg mix every one-and-three-quarters to two hours. Feeding continued until midnight most nights and resumed again the following morning at 5.00am. As the chick swallows an item of food it will often produce a faecal sac, which with a little practise can be caught with a pair of tweezers. The chick's beak and mouth may need to be carefully cleaned with a damp cotton bud after each feed. The chick needs to be kept clean at all times and the 'nest' needs to be changed frequently. On the first day the chick will often gape regardless of whether it needs feeding or not, so care must be taken not to overfeed it, but equally care must be taken not to feed it too little. After the first day the quantity of food can be increased. Five days after the chick hatched I reduced the temperature in the brooder to 34.5°C (94.1°F) and by a further degree each day thereafter. The chick's eyes had opened by the sixth day. On the eighth day the humidity was reduced to 48% and then to 45% the following day. I continued to reduce the temperature each day until it reached room temperature and also reduced the humidity each day until it was the same as that of the room. By the twelfth day the chick was too large and active to remain in the brooder and had effectively fledged. It was, therefore, placed in a single breeder cage with two perches, one angled slightly, so that it could find a level at which it was comfortable. I began to introduce small crickets and white-skinned mealworms into its diet and pushed slices of ripe pear through the wires of the cage front to encourage it to feed. At about 16 days of age the fledgling was becoming more agile and a shallow water drinker was introduced and, a week after fledging, a pot of mealworms. Soon afterwards it was feeding itself. Fortunately, a week earlier a clutch of chicks had fledged in one of

the aviaries and I was able to place him with one of these - which luckily turned out to be a female. It can be quite difficult to avoid a hand-reared chick becoming imprinted and ultimately useless for breeding purposes. If chicks are reared together in a group the problem is almost eliminated, but either way, the sooner young birds are placed with others of their own species, so much the better. The bird I hand-reared, although not imprinted, remains by far the tamest Pekin Robin I keep and has paired up ready to breed. The real test will be whether it does so successfully.

Everyone seriously interested in breeding Pekin Robins should read Peter Karsten's book *Pekin Robins and small softbills: management and breeding* (Hancock House Publishers, 2007), which covers in great detail pretty much everything to do with keeping and breeding Pekin Robins.

### Products mentioned in the text

Calcivet and Insect Essentials: both produced by The Birdcare Company, 21-22 Spring Mill Industrial Estate, Avening Road, Nailsworth, Glos. GL6 OBS, UK. Website: [www.BirdcareCo.com](http://www.BirdcareCo.com)

*Christopher Dunn BSc Hons (Zoology) is Coordinator of the Avicultural Society's recently set-up Special Interest Group for those who keep and breed Pekin Robins. If you are interested in participating in this group, perhaps to exchange birds or find a mate for an unpaired bird, you can contact Chris via E-mail: [chrisdunn1987@hotmail.co.uk](mailto:chrisdunn1987@hotmail.co.uk)/Tel:07413 522485*

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## PERFECTING THEIR SKILLS

Keepers at Chester Zoo perfect their hand-rearing skills raising commoner species of passerines such as the Pekin Robin *Leiothrix lutea* and later use these skills to help save endangered species in the wild. Most notably on the Indian Ocean island of Mauritius, where keepers and other staff from Chester are heavily involved in projects to rescue and help hand-rear endangered species such as the Mauritius Fody *Foudia rubra* and Mauritius Olive White-eye *Zosterops chloronothus*.

During the visit of Paul Morris and Amy Vercoe, nine fody chicks were rescued from failed nests in the wild and eight of them were successfully hand-reared. The successfully hand-reared birds are reintroduced back into the wild onto selected small islands off the coast of Mauritius. Ile aux Aigrettes was the first translocation site used for this project, however, having reached optimum population size, work has begun on a second translocation site on Round Island.

## THE 2010 BREEDING SEASON AT WADDES DON MANOR

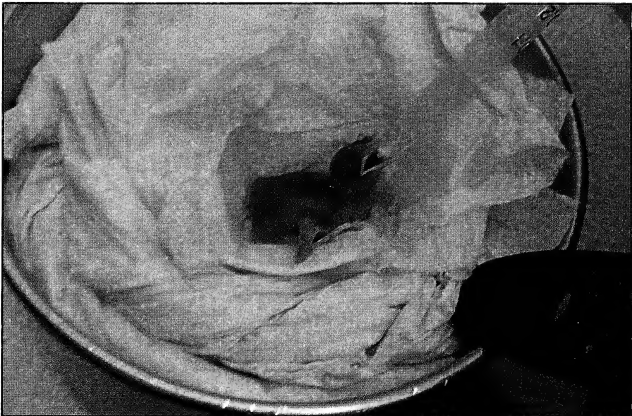
by Ian Edmans

Waddesdon Manor Aviary houses a collection of Asian and African softbills, along with a variety of partridges and doves. The 2010 breeding season was one of our most successful, with 105 young of 24 species reared to independence.

List of birds reared to independence during 2010 at Waddesdon Manor.

Collared Hill Partridge <i>Arborophila gingica</i>	2
Crested Wood Partridge <i>Rollulus rouloul</i>	5
Emerald Dove <i>Chalcophaps indica</i>	3
Mindanao Bleeding-heart <i>Gallicolumba criniger</i>	3
Green-naped Pheasant Pigeon <i>Otidiphaps n. nobilis</i>	2
Spot-flanked Barbet <i>Tricholaema lacrymosa</i>	2
Brown-breasted Barbet <i>Lybius melanopterus</i>	13
Bearded Barbet <i>Lybius dubius</i>	2
White-eared Bulbul <i>Pycnonotus leucogenys</i>	2
Fairy Bluebird <i>Irena puella</i>	5
Bali Starling <i>Leucopsar rothschildi</i>	4
Grosbeak Starling <i>Scissirostrum dubium</i>	5
Pagoda Starling/Mynah <i>Sturnus pagodarum</i>	11
Snowy-crowned Robin-Chat <i>Cossypha niveicapilla</i>	2
Orange-headed Thrush <i>Zoothera citrina</i>	15
Chestnut-backed Thrush <i>Zoothera dohertyi</i>	7
Blue-crowned Laughingthrush <i>Dryonastes courtoisi</i>	4
Sumatran Laughingthrush <i>Garrulax bicolor</i>	5
Moustached Laughingthrush <i>Ianthocincla cineracea</i>	4
Spotted Laughingthrush <i>Ianthocincla ocellata</i>	1
Pekin Robin <i>Leiothrix lutea</i>	4
Grey-cheeked Liocichla <i>Liocichla omeinsis</i>	1
Red-tailed Laughingthrush <i>Trochalopteron milnei</i>	2
White-collared Yuhina <i>Yuhina diademata</i>	1
Total	105

We were especially pleased to breed the White-collared Yuhina *Yuhina diademata* for the first time at Waddesdon, as well as the Bali Starling *Leucopsar rothschildi*, which had not been bred here since the 1990s. Another success, the rearing of two clutches of Sumatran Laughingthrushes



**Day old White-collared Yuhina.**

*Simon Matthews*



**Two Grosbeak Starling chicks.**

*Simon Matthews*

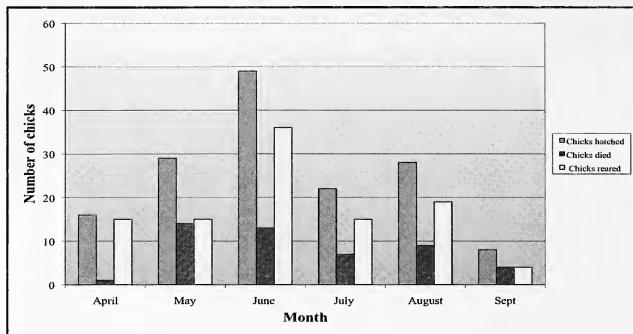


Simon Matthews

**Young Brown-breasted Barbets.**

*Garrulax bicolor*, was achieved thanks to the cooperation between ourselves and Paultons Park in Hampshire. Three clutches of eggs from two genetically important pairs were transported from Paultons Park to Waddesdon to be hand-reared. The first clutch failed to thrive, but the chicks of the second and third clutches were reared successfully. The young of this species have

Fig. 1. Numbers of chicks hatched and reared in 2010.



still not been parent-reared in the UK and there remains the need for further research into its husbandry.

Two pairs of Pagoda Starlings or Pagoda Mynahs *Sturnus pagodarum* were added to the collection during the year and both pairs bred well and produced a total of 11 young, though the sex ratio of two males and nine females was less than ideal. Three pairs of Brown-breasted Barbets *Lybius melanopterus* produced a total of 13 young. However, two of the pairs we created, when they were breeding proved too aggressive towards other birds and have since been removed from mixed species aviaries. The arrival of a male Fairy Bluebird *Irena puella* on loan from Henk van de Broek led to five young being bred, fathered by him, two of which, unfortunately, died later.

We began the breeding season with 44 pairs of birds, representing 30 different species, and during the breeding season created an additional four pairs. Thirty pairs succeeded in rearing young, which meant that 62.5% of our pairs bred successfully.

Though in an ideal situation all of our birds would rear their own young, hand-rearing continues to have a role at Waddesdon. Of the 105 young reared 80 were parent-reared and 25 were hand-reared by keepers. Pairs are given several opportunities each season to parent-rear their young, however, if a pair continually fails to hatch its eggs or rear its young and, we cannot identify the reason, we may take the decision to hand-rear.

A total of 155 chicks were hatched, of which 50 died before they were weaned (see graph). On average two-thirds of the young hatched at Waddesdon survive and become independent, so it is assumed that either



more eggs were laid or a larger percentage than usual hatched in 2010. Unfortunately, there is insufficient past information to enable us to compare the results and test these theories.

### The 2011 breeding season

This breeding season we hope to be successful with some of our newest arrivals such as the Black-spotted Barbets *Capito niger*, our second pair of Spot-flanked Barbets *Tricholaema lacrymosa* and Pink-headed Fruit Doves *Ptilinopus porphyreus*. Our Rufous-bellied Niltavas *Niltava sundara* and Collared Grosbeaks *Mycerobas affinis* came close to rearing young in 2010 and we very much hope that both will succeed in doing so in 2011.

*Ian was recently appointed Curator of Birds at Waddesdon Manor Aviary, following the retirement of Ian Hadgkiss. E-mail: Ian.Edmans@nationaltrust.org.uk*

*Waddesdon Manor, near Aylesbury, Buckinghamshire HP18 0JH, was built (1874-1889) by Baron Ferdinand de Rothschild on a hilltop overlooking Aylesbury Vale. It has one of the finest Victorian gardens in the UK, at the heart of which is the Aviary.*

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## WORKING WITH ASIAN HORNBILLS

Chester Zoo currently keeps five species of Asian hornbills, including the Great *Buceros bicornis*, Rhinoceros *B. rhinoceros* and Wrinkled Hornbill *Aceros corrugatus*, all of which it has bred. It also supports conservation work with these species in south-east Asia, including nest site monitoring in southern Thailand and hornbill survey and community work as part of its Realm of the Red Ape project in Borneo.

It is one of only two zoos in Europe which keep the Visayan Tarictic or Writhed Hornbill *A. leucocephalus*. It supports field work and a captive breeding programme for this species in the Philippines and for the Critically Endangered Rufous-headed or Visayan Wrinkled Hornbill *A. waldeni*. In 2007, Chester Zoo received two pairs of Visayan Tarictic or Writhed Hornbills from the Philippine Government and, in 2008, was the first collection outside of the Philippines to breed this species. These and the four that were bred in 2010 will be sent to other zoos as part of the EEP (European Endangered Species Programme) plan to establish a zoo population which can act as a safety net.

# BREEDING THE BLACK-NECKED WEAVER

## *Ploceus nigricollis melanoxanthus*

### AT PAIGNTON ZOO ENVIRONMENTAL PARK

by Peter Smallbones

The Black-necked Weaver *Ploceus nigricollis melanoxanthus* is a shy, mainly insectivorous weaver, which lives in pairs or small groups. It breeds in southern Ethiopia, southern Somalia, central and eastern Kenya and north-eastern Tanzania, where it inhabits wooded country, ranging from savannah woodland to gallery forest.



© Peter Smallbones

Adult pair of Black-necked Weavers.

The adult male has a black nape, upperparts, wings and tail, as well as a black eye-mask and bib, along with a golden yellow forehead and crown and yellow underparts. The iris is red to deep reddish brown. The adult female is similar but is a paler shade of yellow and has a black crown and eye-stripe but lacks the black bib (see photo above). The juvenile is similar to the female, but duller.

The nominate subspecies *P. n. nigricollis*, found from eastern Cameroon to northern Angola and from there eastwards across Africa to the Democratic Republic of Congo, southern Sudan, Uganda, western Kenya and north-western Tanzania, is similar to *P. n. melanoxanthus*, except that the male



© Mr & Mrs Wiltshire

**Female Black-necked Weavers entering nest.**

has grey-black upperparts, its rump has an olive green wash and the flight and tail feathers have narrow olive green edging. The iris is yellow, creamy white or deep brown. *P. n. brachypterus*, found from Senegal to Nigeria and western Cameroon, has olive upperparts. The iris is pale blue-grey or pale brownish-grey.

Their song is a short and loud “wriou wriou wizz” and the contact calls, metallic, musical, double notes “treeng tireeng.” They have a sharp, twangy alarm call. The Black-necked Weaver is categorized as a species of Least Concern on the IUCN Red List.

On October 13th 2009, Paignton Zoo Environmental Park obtained three juvenile Black-necked Weavers from Copenhagen Zoo. Following a short quarantine period they were placed in the Tropical House release

pen to acclimatise to their new surroundings. On November 13th 2009, the release pen doors were opened and the weavers were released into the Tropical House. This is a mixed-species walk-through exhibit measuring approximately 44m x 14m x 9m high (145ft x 45ft x 30ft high) and is home to some 17 different species, including Crested Quail-Dove *Geotrygon versicolor* and the Orange-spotted Bulbul *Pycnonotus bimaculatus*. The temperature ranges from 18°C-26°C (64.4°F-78.8°F) with 60%-90% relative humidity. It is thickly planted with species such as Weeping Fig *Ficus benjamina* and banana plants.

The weavers settled in well and have not encountered any problems with the other inhabitants. The pair feed mostly on fruit (mainly banana, apple, pear, tomato and black grapes) chopped-up small and mealworms which are distributed several times a day. They also have access to a variety of other foods, such as Witte Molen softfood with insects and grated egg, which are available in dishes throughout the house for all the various inhabitants.

The pair began to build its first nest in February 2010, after which the female spent most of her time in the nest and it was assumed that she was sitting on eggs, but no young were seen. In fact a further five nests were built before the pair was eventually successful.

The nest of the Black-necked Weaver consists of a globular coarsely woven nest chamber with a 15cm (approx. 6in) long downward facing entrance tube. Mating occurs in the nest and the female is thought to lay two to three eggs. All of the nests at Paignton have been built in large *Ficus* at ceiling height, i.e. approximately 9m (30ft) above the ground. The male has been seen chasing away Speckled Mousebirds *Colius striatus* that have tried to perch on the nests and the unpaired remaining male is always kept well away.

On August 16th 2010, a Black-necked Weaver fledgling was spotted being fed small pieces of fruit by the female. On the 30th, the young weaver was again seen eating small pieces of fruit, only on this occasion it was feeding itself and the adult pair had already nearly completed a new nest. So far as we are aware the Black-necked Weaver has never previously been bred in the UK.

Late on the afternoon of September 21st, 36 days after the chick had fledgled, six times in the space of roughly 10 minutes, the female was seen taking small pieces of fruit into the new nest, while less than 1m (3ft 3in) away the male was again busy beginning to build yet another new nest.

### **Product mentioned in the text**

Witte Molen softfood: manufactured by Witte Molen, Moleneind 2, 4268 GD Meeuwen, Postbus 25, 4260 AA Wijk en Aalburg, the Netherlands: Website: [www.wittemolen.nl](http://www.wittemolen.nl)

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As described above, the Black-necked Weaver *Ploceus nigricollis melanoxanthus* has been bred at Paignton Zoo Environmental Park. This is probably the first successful breeding of this species in Great Britain or Ireland. Anyone who knows of a previous breeding is asked to inform the Hon. Secretary.

\* \* \*

## WHY DOES?

Why does the plumage of the Green Jay *Cyanocorax yncas*, and that of the Green Magpie *Cissa chinensis*, change colour in the way that it does? Is it because there is something lacking in the diet we feed them in captivity or is there another reason? I can remember Richard Mark Martin (Richard Meyer) arguing that it is not due to their diet but is a result of prolonged exposure to strong sunlight which, I have read, bleaches the yellow pigment out of the feathers. Both are forest species, with the Green Magpie said to “shun open spaces” and the Green Jay said to dislike “flying over clearings or exposed places.” In the case of the Green Magpie, the pale blue faded or bleached plumage is by no means confined to captive birds, but is also known to occur in the wild (and with museum specimens), with birds living in open or dry forest being most prone. It would seem to follow, therefore, that these species are more likely to retain their natural/normal coloration, if they are housed in well-shaded aviaries.

## NEWS OF PARROTS AT WELTVOGELPARK WALSRODE

by Simon Bruslund and Martin Gaede

Our first Red-tailed Black Cockatoo chick *Calyptorhynchus banksii* hatched in December 2008 and remained with its parents for a good seven months. A year later, almost to the day, the female laid for the second time. Again only a single egg was laid and the chick was reared successfully. In 2010 the pair kept up this tradition and at the time of writing (February 2011) is rearing its third chick. The Australian black cockatoos are rare in aviculture outside of Australia and successful breeding is seldom achieved without resort to hand-rearing. Most hand-reared males display some degree of imprinting and will not accept females of their own species. For this reason, parent-reared young black cockatoos are especially welcome at Walsrode.

The Karimunjawa Islands subspecies of the Moustached Parakeet *Psittacula alexandri dammermani* first arrived at Walsrode in 2008 and bred in 2010. When the first clutch of young was in the nest, we discovered that the pair brooded the chicks for only a short time each day and during the cold and rainy spring of 2010, they were not developing as well as we hoped. Therefore, the two chicks were removed and hand-reared and both made a fine recovery. When the second clutch was in the nest the weather was much better and the parents reared a further three chicks without any problems. We cannot at present say whether the limited time spent in the nest with the chicks is a particular adaption peculiar to this subspecies or just a characteristic of this particular pair. Other subspecies of Moustached Parakeet kept at Walsrode in the past did not behave in this way.

The Blue-bellied Parrot *Triclaria malachitacea* and the Pileated Parrot *Pionopsitta pileata* are two mid-sized species that inhabit the seriously threatened Atlantic rainforest of Brazil. The Blue-bellied species has bred regularly at Weltvogelpark Walsrode since the 1980s and, in 2009, we achieved our best result so far, with seven young being reared. We have been less successful with the Pileated Parrot. However, in 2009 we received two eggs from a breeder whose pair had destroyed all of its previous clutches of eggs. Two chicks hatched and were reared by our nursery team, enabling us to add this species to our collection for the first time in a decade.

Another new bird added to the collection in 2009 was the New Caledonian Lorikeet *Trichoglossus haematodus deplachii* of which we received an unrelated pair from France. We also managed to establish an unrelated pair of the closely related Edward's Lorikeet *T. capistratus* for the first time in 2009. The pair bred that year and has since proved to be very prolific, the

parents rearing four clutches of chicks in 2010. As soon as the young fledged, the female laid a further clutch of four eggs. Eventually, we removed the nest box to force them to take a break.

One of our breeding pairs of Blue-crowned Lorikeets *Vini australis* has repeatedly produced single egg clutches and, having reared the chick, takes a five to six months break before producing a further single egg clutch. This means that this little lorikeet has one of the slowest reproduction rates in our collection.

Following an even longer break our Purple-naped Lories *Lorius domicella* have begun to breed again. The current pair consists of a female bred here in 1994, paired with a male imported from Indonesia via Köln Zoo. A male offspring hatched in February 2010 remained with its parents throughout the breeding season even though they went on to produce a second clutch. The adult male has the unusual habit of "clicking" his bill when he is excited. It is interesting to observe how his offspring try to imitate this but never quite succeed. In 2010, we succeeded in breeding the Purple-bellied Lory *L. hypoinochrous* for the first time at Walsrode. During incubation and the rearing of the chicks, both parents spent most of the time in the nest box. As a result, every few days keepers had to clean out the nest box and put in fresh wood shavings.

Our Goldie's Lorikeets *Psitteuteles goldiei* have long been maintained as a group and seem to do well when kept this way, though not all of the pairs breed. When we placed the group of 12 birds in our 2,800sq m (approx. 30,000sq ft) Nusantara Rainforest exhibit we expected to see an increase in breeding results. However, the contrary was the case and during the following six months there was not a single successful breeding. Therefore, we returned the birds to their familiar surroundings in the Lory Atrium in which the group share a smaller aviary and, within a few weeks, they began breeding again.

The Musk Lorikeets *Glossopsitta concinna* fledged a single chick in a breeding complex behind the scenes. It is interesting to see that young Musk Lorikeets have an indistinct overall brown tinge to their first plumage. Young Galahs *Eolophus roseicapilla* are rather more grey than rose coloured when they fledge. Although this cockatoo is highly social, breeding success is only possible in a group when the pairs are given the opportunity to defend their nest sites. When the young leave the safety of the nest they are normally accepted by other members of the group. Initially, they appear baffled by the number of unknown birds around them, but after a little while begin to pursue all of the adults in the group and beg them for food. It generally takes up to a day for the young Galahs to learn to recognise their own parents outside the nest chamber. Their grey plumage seems to serve as an inhibitor,

causing the otherwise rather coarse Galahs to be gentle with them.

We have a group of four Keas *Nestor notabilis*, consisting of an older pair and a younger pair, on exhibition in the park and in the spring keepers were surprised to find a clutch of eggs. Unfortunately, they were damaged, possibly by the younger and less experienced pair. They were removed and placed in an incubator and the chicks were hand-reared. Kea chicks are covered with down and are well adapted to a cold climate and steps must be taken when they are being hand-reared to avoid them overheating, as this leads to slowed digestion, regurgitation and dehydration.

The Blue-naped Parrots *Tamynathus lucionensis* reared a single chick in 2010. The pair, consisting of an experienced female and a much younger male, also reared chicks in 2008 and 2009.

The Horned Parakeets *Eunymphicus cornutus* reared six chicks in 2010. The two chicks, a male and a female, from the first clutch remained with the parents while they were rearing the second clutch. This did not seem to cause any problems, but the older siblings did not assist their parents rearing the second clutch as we were expecting.

*Weltvogelpark (World Bird Park) Walsrode in northern Germany has 125 species of parrots. The majority of these are housed in the Parrot House (Papageienhaus) and Lory Atrium (Lori-Atrium). A new attraction in the Paradise Hall (Paradieshalle) is an area specially set aside for free-flying lorikeets, where visitors can purchase a pot of nectar and feed the colourful Rainbow Lorikeets T. haematodus.*

\* \* \*

## NUMEROUS FIRST BREEDINGS

Weltvogelpark Walsrode was the first collection in the world to successfully breed a member of the Toucan family (Ramphastidae), when it bred the Red-breasted Toucan *Ramphastos dicolorus* for the first time in 1965, a few years after the opening of the park. The impressive list of other species bred for the first time at Weltvogelpark Walsrode includes the Greater Bird-of-Paradise *Paradisaea apoda*, Secretary Bird *Sagittarius serpentarius*, Giant Coua *Coua gigas*, Blue Coua *C. caerulea*, Knobbed Hornbill *Aceros cassidix*, African Spoonbill *Platalea alba* and Bateleur (Eagle) *Terathopius ecaudatus*. It was also first to breed the African Grey Hornbill *Tockus nasutus* and the Silvery-cheeked Hornbill *Bycanistes brevis*.

The Weltvogelpark Walsrode Foundation supports conservation programmes around the world. It has carried out important conservation work in countries such as Belgium, Bolivia, Brazil, Chile, Indonesia, Cambodia, Madagascar, New Caledonia, Mexico, Perú and Pakistan.



## THE GREY SINGING FINCH *Serinus leucopygius*

by John Santegoeds, Huub Vervest and Gaetan Vicentini

The Grey Singing Finch (or White-rumped Seedeater) *Serinus leucopygius* is a small grey bird with a beautiful song and a special character. In France it is called *Chanteur d'Afrique* and in Italy *Cantore d'Africa* - singer of Africa - while the Dutch, Belgians and Germans call it *Edelzanger* or *Edelsänger*.

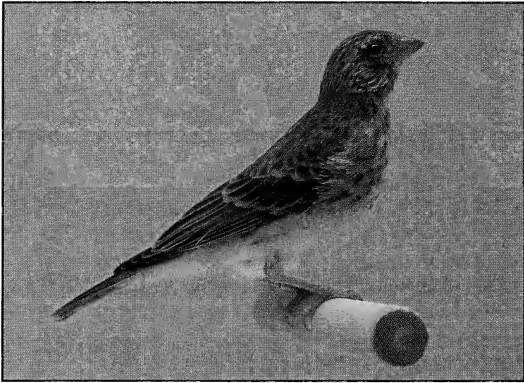
In the early days there was a desire to breed good singing canaries by crossing a male Grey Singing Finch with a female domestic canary. It was not easy. The main problem was that most imported male Grey Singing Finches were not in breeding condition at the same time as the female canary. The male Grey Singing Finch's song was usually at its peak when the female canary was moulting and was no longer in breeding condition.

The Grey Singing Finch is, of course, closely related to the domestic varieties of canary, which are descended from the wild Canary *S. canaria* of Madeira, the Azores and Canary Islands. In Africa, where it is found across the continent from Senegal to Sudan, Ethiopia and Eritrea, the Grey Singing Finch has, however, a different breeding season to that of the domestic canary. This is one of the reasons why it is difficult to cross a male Grey Singing Finch with a female canary. Nowadays, of course, if we wish to maintain the Grey Singing Finch and other *Serinus* spp. in aviculture in Europe, it is vital that we concentrate on breeding only pure-bred birds and, to help promote the breeding of birds of the genus *Serinus*, we have set-up the European Society of Serinus Breeders (ESSB).

There are probably still many Grey Singing Finches in Belgium and the Netherlands that are kept in outside aviaries. Often they were acquired with the idea that they are peaceful birds (which they are unless housed with closely related species) and because of the male's song and the fact that Grey Singing Finches fit in well housed with more colourful birds. Unfortunately though, when housed outside and sharing an aviary with other birds, Grey Singing Finches very often do not breed successfully. One reason for this is that imported birds are usually not ready to breed until autumn, when here in western Europe the climate is often too cold and too wet for them to breed successfully in an outside aviary. It is far better to bring pairs inside at the end of July/beginning of August and house them in breeding cages (one pair per cage). This will greatly enhance the chances of success.

When the male Grey Singing Finch is ready to breed he begins to sing and chases the female with his wings hanging down and the two chase one another in a butterfly-like display flight. They prefer to build the nest in a

small basket or a nest box like the type shown in the photo (p.38). The inside diameter of the nest is only about 4cm (just over 1½in). The birds can be saved a lot of work by providing them with a pre-formed nest. If the (unheated) indoor breeding quarters are a reasonable temperature, it is possible to breed Grey Singing Finches in September, October or November and have a second opportunity to breed them in February, March and April.



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**It is a small bird measuring about 11cm (4½in) in length with simple coloration.**

Grey Singing Finches do not have any special dietary requirements. They can be given an enriched tropical finch mixture, by which we mean a tropical finch seed mix (containing mostly various types of millet), complemented with species of grass seed, lettuce seed, plain canary seed, niger and perilla. Greenfood and eggfood are regarded as standard. Using this fairly simple diet it is possible to breed the Grey Singing Finch and other *Serinus* spp.

The opportunity to bathe several times a week will guarantee that Grey Singing Finches remain in good condition. Fourteen hours of light per day is not excessive in indoor breeding quarters. Breeders can use their breeding cages in spring and summer to breed canaries or European seed-eating species and in autumn and early spring use the same cages for breeding African *Serinus* spp.

Often one looks for points that may help visually distinguish between male and female Grey Singing Finches. It may perhaps be possible to see that males are somewhat whiter around the area of the throat and on the belly, whereas females are more of a dirty white and a little more streaked on the throat and belly, but one needs to have a good knowledge of this species



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The eggs are incubated by the female for 12-14 days.



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On becoming independent young birds are best kept caged for several days.



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**A type of nest box favoured in Europe, in this instance being used by a pair of Black-throated Seedaters or Yellow-rumped Serins *S. atrogularis*.**

and an experienced eye to pick this out. A better way of sexing them is to listen for males singing and when this happens place a coloured, split ring (band) on one leg and keep a record of the number. Sometimes months may pass during which none of the birds are heard singing. If they are moved to a different location, another Grey Singing Finch is placed in with them or a bird is placed in a cage by itself, this may induce them to burst into song. Once a bird sings strongly you can be sure that it is a male. A bird that has been moved to several different locations and/or has been placed on its own for several days and has not sung can be assumed to be a female and should be ringed (banded) accordingly.

Young Grey Singing Finches on becoming independent of their parents are best kept for several days in a show cage or box cage. At about six weeks of age males are already beginning to practise their singing skills.

*To learn more about the European Society of Serinus Breeders (ESSB) you can visit its Website: [www.Serinus-Society.eu](http://www.Serinus-Society.eu)*

## BREEDING THE GREEN JAY *Cyanocorax yncas* AT BARCELONA ZOO

by Miguel Sierra and Rosana Gallego

The Green Jay *Cyanocorax yncas* is a relatively small forest jay with green to bluish green upperparts and yellow or green underparts and has a relatively long and narrow tail with yellow outer tail feathers. The lores, ear-coverts, face and throat are black. The nominate subspecies has a small tuft of ultramarine coloured feathers on the forehead, an ultramarine spot above the eye and a large patch the same colour below the eye. The crown and nape are pale yellow, or in some individuals, these are white.

The Green Jay has a complex taxonomy with 13 subspecies recognised by del Hoyo et al. (2009). These can be divided into two groups, which have sometimes been treated as two (or more) species. The Andean (nominate) group (Inca Jay) is found from Venezuela and Colombia, south to Bolivia. The subspecies in this group are slightly larger than the Central American subspecies and have a larger frontal crest (on the forehead) and yellow underparts. The upperparts are darker green or bluish and they have a whitish or blue nape. The Central American (*luxuosus*) group (Green Jay) is found from Texas to Honduras. The subspecies in this group are smaller and have a short and inconspicuous frontal tuft (on the forehead) and a blue crown and nape. The northern subspecies have green underparts and the southern subspecies have yellow underparts.

All have a black bill. The colour of the iris varies from brown to yellow depending on the subspecies. Likewise, the colour of the legs and feet vary from reddish-brown to brown or greyish/blackish, again depending on the subspecies. Many of the subspecies intergrade. The sexes look alike.

The Green Jay is strangely absent from El Salvador, Nicaragua, Costa Rica and Panama.

Green Jays measure 25cm-27cm (approx. 10in-10½in) in length. The males at Barcelona Zoo weigh 70g-83g (n=8) and the females weigh 68g-78g (n=4).

### Housing

Here at Barcelona Zoo our breeding pairs of Green Jays are kept in an indoor exhibit. The exhibit covers an area of 70sq m (approx. 750sq ft) and has a 10sq m (approx. 108sq ft) pond. During the winter the temperature in the exhibit is maintained at 20°C-24°C (68°F -75.2°F). One side and half of the rear wall are decorated to resemble a rock cliff and the other half of the back of the exhibit has a photo poster. The exhibit has seven skylights,

each protected with welded wire mesh, which can be opened in the summer. At the front of each exhibit we have installed glass. The floor of the exhibit is a mixture of earth and turf. Caution must be exercised when designing an exhibit for Green Jays, because being members of the corvid family, they are inquisitive and are liable to swallow unlikely/unusual items (e.g. the necropsy on one bird showed what was thought to be silicone in its stomach).

The exhibit is thickly planted with *Ficus benjamina*, *F. alii*, *Pseudosasa japonica*, *Philodendron xanadu*, another *Philodendron* sp., *Monstera* sp., *Spathiphyllum*, *Chamaorea* and *Schefflera*. Green Jays share the exhibit with the following species: crowned pigeons *Goura* spp., Nicobar Pigeon *Caloenas nicobarica*, Screaming Piha *Lipaugus vociferans*, Golden-headed Quetzal *Pharomachros auriceps*, Crested Oropendola *Psarocolius decumanus*, Great Curassow *Crax rubra*, Long-wattled Umbrellabird *Cephalopterus penduliger*, Wattled Jacana *Jacana jacana*, White-naped Pheasant Pigeon *Otidiphaps nobilis aruensis*, Boat-billed Heron *Cochlearius cochlearius* and Sunbittern *Eurypyga helias*, as well as Lyle's Flying Fox *Pteropus lylei*. The only problem we have encountered is the eggs of the White-naped Pheasant Pigeons have been broken.

When youngsters are separated from their parents, they are housed in smaller exhibits in the same house. We also use hanging cages made of 2.5cm x 2.5cm (lin x lin) welded wire mesh that measure 193cm x 101cm x 102cm (approx. 6ft 3in x 3ft 3in x 3ft 4in). Each cage is fitted with two perches and houses only one jay.

During the winter of 2009, three males were housed in an outdoor exhibit measuring 4.1m x 3.5m x 4.5m high (approx. 13ft 6in x 11ft 6in x 14ft 10in high) with access to a heated area measuring 3.2m x 3m x 3.5m high (approx. 10ft 6in x 9ft 9in x 11ft 6in high) in which the food tray was placed. In the winter the temperature in Barcelona dropped as low as -1°C (30.2°F) but all three birds came through without difficulty. In 2010, a breeding pair was set-up in this outdoor exhibit.

## Diet

Our Green Jays are fed once a day in stainless steel food trays placed at least 1m (approx. 3ft 3in) above the ground. They are offered diced fruit and vegetables, which consist of avocados (we do not use oranges, mandarins or kiwi fruit because their high Vitamin C content aids the absorption of iron), grated carrots, boiled potatoes or yams, boiled maize, lettuce, Witte Molen egg-rearing food with hedgerow plants, Tropical Bits, T16 low iron pellets and, during October-June, hard-boiled egg. Calcium is sprinkled on the food. Nekton Lori is offered once a day in the morning. Livefood consists of mealworms, zobhoba (*Zophobas morio*), locusts and crickets. Livefood

is offered once a day each afternoon, but is increased to twice a day when the birds have young to feed. The locusts and crickets are scattered on the floor of the exhibit.

The mealworms are maintained on a diet of bran and pieces of fruit. Mealworms and crickets have low levels of calcium and high levels of phosphorous, which creates an imbalance of calcium and phosphorous. Therefore, three days before the mealworms are about to be fed to the birds, they are fed a mixture of (poultry) chick food (400g) and  $\text{CaCO}_3$  (50g), in order to gut-load them and increase the level of calcium.

We find that after several moults Green Jays lose their colour. The yellow feathers fade and turn whitish and the green feathers turn blue, because the green colour is a combination of yellow and blue (Vince, 1996). In an attempt to avoid this loss of colour we sprinkle Nekton Gelb (intended to intensify the yellow plumage of birds) onto the food. To be effective this must of course be done when the birds are moulting, which in Barcelona is between August -November. The difficulty is that the Green Jays share the exhibit with other species and lose their colour faster than they would were they housed alone, as in the mixed exhibit they are free to eat whatever they like, rather than the diet intended for them. So in a mixed exhibit it is almost impossible to retain their natural green and yellow coloration.

## Breeding

In January 2000, we acquired a breeding pair of Green Jays from a dealer. The pair produced a chick in October 2001 which, unfortunately, was stolen in January 2002. On that first occasion the pair used small sticks from plants in the enclosure to build a nest 3m (approx. 9ft 9in) above the ground on a fork of a *Ficus* sp.

In September 2007, we acquired three males and a female from Faunia Zoo here in Spain. The first clutch of eggs was laid at the beginning of April the following year and two chicks were found on April 21st 2008. On that occasion a platform was used on which the nest was built using sticks collected from the zoo grounds. All three males and the female continued to be housed together, though only the pair incubated the eggs and reared the chicks. On May 28th, however, one of the males was found dead; another was found dead on June 21st.

On May 21st a second brood, of four chicks, had been found in the same nest, after which the pair built a new nest 3m (approx. 9ft 9in) above the ground in a *Ficus benjamina*. All six youngsters were separated from their parents on July 22nd. Blood samples were taken and the birds were DNA sexed and proved to be four males and two females.

All six were housed together as a group in the same exhibit. In April

2009, however, one of the males was killed by the others. We removed the two females and following this there was no further aggression of any kind. Later, one of the females was transferred to Attica Zoo in exchange for a male, so that an unrelated second pair could be established.

We have observed that before the beginning of any breeding activity, Green Jays are very noisy and make a number of different sounds, but the calls stop when the eggs are laid.

In 2009, the first two youngsters were found in the exhibit on March 13th. Two further chicks had died in the nest and, on April 20th, one of the youngsters hatched on March 13th was found dead. The remaining youngster was removed to an off-exhibit area. Two further chicks were seen on June 12th and a further two on August 6th and, the last two of the 2009 breeding season, were seen on October 19th.

In 2010, we changed the set-up and housed the breeding pair on its own, as we were concerned about the important loss of colour. The new pair was established in the breeding exhibit. The male proved to be very aggressive towards the other birds sharing the exhibit, which he chased and displayed to and was also aggressive with the keepers.

On May 10th, a chick was found beheaded on the floor of the exhibit. A replacement clutch was laid and a new chick was found on June 30th. Unfortunately, however, on July 2nd it was found dead tangled up in some branches.

Green Jays can begin to breed at two years of age. The breeding season at Barcelona Zoo begins in March and ends in October. The female usually lays a clutch of four eggs, but may lay as many as five or as few as three eggs. They are very pale greyish with greenish colouring and dark markings. One infertile egg measured 30mm x 21mm and another measured 29mm x 21mm. The incubation period is 16-21 days. The young are fed in the nest for 19-22 days and for at least a further three weeks after fledging. They are fed by both parents. Youngsters are separated from their parents at between one to three months of age.

### **Transport**

They are transported in crates measuring 35cm x 17cm x 25cm high (approx. 1ft 1<sup>3</sup>/<sub>4</sub>in x 6<sup>3</sup>/<sub>4</sub>in x 9<sup>3</sup>/<sub>4</sub>in high), with a padded foam roof and a single perch. Each crate houses only one bird.

### **Pest control**

One of the main problems we have to deal with is mice. We avoid any kind of poison because we have seen our Green Jays hunting mice and feeding on them. What we do is to remove the food trays from the exhibit in the late afternoon and set-up (Ketch-All) multiple catch mouse traps.



## Veterinary procedures

To do any veterinary procedures and avoid the risk of shock, birds are anaesthetized using isoflurane. Induction is done at 5% concentration and maintained at 2.5%-3% and with 0.6-0.8 l O<sub>2</sub>/min. Blood samples are taken mainly from the ulnar vein. Sexing is done by DNA analysis from blood samples.

## Acknowledgements

We would like to thank the bird keeping staff for the effort put into caring for the bird collection. With special thanks to Marta Sanmartin DVM for the information about veterinary procedures.

## Products mentioned in the text

Nekton Gelb and Nekton Lori: produced by Nekton GmbH. Kieselbronnerstr. 28, Germany, D-75177. Website: [www.nekton.de](http://www.nekton.de)

Nutribird T16 low iron pellets: manufactured by Versele-Laga NV, Kappellestraat 70, B-9800, Deinze, Belgium. Website: [www.versele-laga.com](http://www.versele-laga.com)

Tropical Bits: manufactured by Marion Zoological Inc., 2003 E Ctr., Plymouth, MN 55441, USA. Website: [www.marionzoological.com](http://www.marionzoological.com)

Witte Molen egg-rearing food: manufactured by Witte Molen, Moleneind 2, 4268 GD Meeuwen, Postbus 25, 4260 AA Wijk en Aalburg, the Netherlands. Website: [www.witemoten.nl](http://www.witemoten.nl)

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## NEWS & VIEWS

### GETTING A HELPING HAND

In News & Views (Vol.116, No.3, pp.140-141 (2010)) I wrote of the plight of the Orange-bellied Parrot *Neophema chrysogaster* and problems concerning both the wild and captive-breeding populations. In *The Sydney Morning Herald* Weekend Edition, p.4, January 29th-January 30th 2011, Peter Ker reported that at least 12 were hatched at Melaleuca during the past breeding season. It is the same number thought to have been hatched there in 2010, which was considered a dreadful failure. However, Mark Holdsworth declared himself relieved that at least the pattern of decline has been halted.

The parrots nest some 7m (approx. 23ft) above the ground in trees, the trunks of which are banded with grease to deter snakes. Forty nest boxes have been put up at Melaleuca, but only four were used during the past breeding season. They produced nine chicks with, it is believed, a further three chicks having been hatched in natural cavities.

A team led by Mark Holdsworth planned to spend February trying to capture as many as possible of this year's crop of young, which were to be transferred to the Tasmanian Government wildlife quarantine centre in Hobart. The plan is to use them to invigorate the captive-breeding population that has become dangerously inbred. The hope is to increase the captive-breeding population (last time put at 160-170 birds), so that there are sufficient Orange-bellied Parrots to be able to release further captive-bred birds into the wild. If the plan works, it is suggested that within two years, captive-bred birds could be released to bolster the wild population at Melaleuca.

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### POORLY KNOWN LAUGHINGTHRUSH

*The Wilson Journal of Ornithology* Vol.123, No.1, March 2011, includes a short paper (pp. 146-150) on a study of the breeding biology of the White-cheeked Laughingthrush *Garrulax sukatschewi* (also known as the Black-fronted or Sukatshev's Laughingthrush), which is largely restricted to the Min Shan Mountains of southern Gansu and north-central Sichuan, China. Considered vulnerable, it is thought to have a small, declining, severely fragmented population, as a result of the destruction of temperate forest, which has been logged and land converted to agricultural use.

A study of the Austral Parakeet *Enicognathus ferrugineus*, also the subject of a short paper (pp. 168-171) in the same issue, suggests that this parakeet is more insectivorous than previously thought. In the northern part of its range in the austral temperate forests of Argentine Patagonia, where there

are marked seasonal shortages of food, it has been observed eating insect larvae during the “pre- and post-reproductive seasons.”

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## MAJOR HORSBRUGH

When writing about Major Horsbrugh's Indian Collection, which was brought to England by Wilfred Frost in 1913 (Vol.116, No.4, p.163 (2010)), I remarked on the fact that I knew little about Major Horsbrugh. As a result, I was contacted by Michael Watkins, who directed me to - [http://en.wikipedia.org/wiki/Boyd\\_Robert\\_Horsbrugh](http://en.wikipedia.org/wiki/Boyd_Robert_Horsbrugh) - where I discovered that he was born in Poona, India in 1871 and died in England in 1916. He joined the Avicultural Society in 1898, while stationed in Sierra Leone. Later, in what is now Ghana, he acquired a pet hornbill (which unfortunately was later killed by his pet genet), reared two Grey Parrots *Psittacus erithacus* which he taught to talk and which became his constant companions and had a very tame turaco, which as soon as he poured water into his bath tub each morning jumped in and splashed about and, sometimes continued to do so, even after he had got into it.

In 1902, he was invalided back to England from the Boer War in South Africa and as part of his convalescence visited the USA and while there studied birds, particularly gamebirds and waterfowl, and met and married Elizabeth Mitchell of Philadelphia. He returned to South Africa with his wife in 1905 and was posted to Bloemfontein, where he built some large aviaries in the garden. He returned to England on leave in 1906 with a large collection of birds and his brother brought a collection to England the following year, which was said to have “caused great excitement in the avicultural world.” Two Levaillant's (Crested) Barbets *Trachyphonus vaillantii* were among the birds brought home and in 1909 an article by Boyd Horsbrugh on this now rarely seen barbet, illustrated by a coloured plate, was published in the magazine. In 1912, *The Gamebirds and Waterfowl of South Africa* by Boyd Horsbrugh and Claude Finch-Davies was published by Witherby & Co., London. The same year an article by him on the Secretary Bird *Sagittarius serpentarius* appeared in the magazine. W. H. Quintin, apparently, received two Secretary Birds from him and wrote in the magazine (1931) that they came from Potchefstroom in the Transvaal, and had been brought as nestlings to his friend Major Horsbrugh. St Quintin found that they ate an extraordinary amount of food including rats, Moles *Talpa europaea* and even Stoats *Mustela erminea* and Weasels *M. nivalis* and swallowed hen's eggs whole, without breaking the shell.

Major Horsbrugh's younger brother C. B. Horsbrugh (1874-1952) later collected birds-of-paradise in New Guinea. Seth-Smith (*Avicultural Magazine* Fourth Series, Vol.1, No.2, pp.40-60 (1923)), wrote that in 1908

London Zoo exhibited no fewer than 10 species of birds-of-paradise, thanks mainly to the enterprise of Sir William Ingram and the skills of C. B. Horsbrugh and Wilfred Stalker, who that year had made a collecting trip to New Guinea on his behalf. Amongst the birds they brought back for Sir William were 12 Raggiana Birds-of-Paradise *Paradisaea raggiana* (while Walter Goodfellow brought back nine for Mrs Johnstone). Later, Wilfred (or William) Stalker, an Australian, was engaged by Sir William to collect Greater Birds-of-Paradise *P. apoda* on the Aru Islands and, assisted by Frost, sent back 56 live birds. Later in 1909, Stalker joined the British Ornithologists' Union (BOU) Jubilee Expedition to New Guinea led by Walter Goodfellow, but on January 9th 1910 on only his third day back on the New Guinea mainland and 10 days before his 31st birthday his body was found in a muddy creek less than 1 mile (1.61km) from the expedition campsite and it was presumed that Stalker, who could not swim, had drowned.

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## FURTHER TO THE ABOVE

Shortly after completing the above item on Boyd Horsbrugh and his younger brother, I received a letter from our Vice President Fred Barnicoat in South Africa, together with a copy of biographical notes on Boyd Horsbrugh which Fred wrote in 1977 for the publication of a facsimile edition of *The Gamebirds and Waterfowl of South Africa*, published in Johannesburg by Winchester Press. Fred explained that he had no problem writing the biographical notes about Claude Finch-Davies (also an early member of the Avicultural Society) as his life is well documented by the Transvaal Museum and he had managed to obtain a photo of Boyd Horsbrugh (that appears on the Wikipedia site) from the surviving son of Finch-Davies in England. Likewise, Boyd Horsbrugh's military career is well documented in South Africa. Information about his ornithological and avicultural pursuits is confined mainly to early issues of the *Avicultural Magazine* (he is listed as having contributed to the magazine over the period 1899-1914) and Fred is fortunate enough to have an almost complete set of magazines.

I was especially interested to learn from his biography of Boyd Horsbrugh that in 1912, the year that *The Gamebirds and Waterfowl of South Africa* was published in London, Boyd Horsbrugh was elected to the council of the Avicultural Society and the following year presented a valuable part of his Indian collection, brought back by Frost, to London Zoo and in recognition of his great generosity was elected an Honorary Fellow of the Zoological Society of London in 1914. Fred is pretty sure that the notes published in the magazine about his Indian collection were written by Hubert Astley who commenced his editorship of the magazine in January 1913. Astley (who

was ordained a clergyman of the Church of England in 1886) belonged to a wealthy family and owned an estate by Lake Como and could speak Italian and accompanied Major Horsbrugh to Milan to speed up the transport of the more delicate birds from Genoa to England.

Fred mentions two six weeks old Blue Korhaans *Eupodotis caerulescens* purchased at the market in Bloemfontein shortly after Captain Horsbrugh, as he was then, returned to South Africa with his wife in 1905, which followed her around and whose photo appeared in the magazine in March 1907. On another occasion while shooting quail along the banks of the Modder River in April 1905, he saw two Double-banded Coursers *Rhinoptilus africanus* rise from the long grass and, noticing that they were accompanied by a young one, approached the spot and found it squatting on the ground and picked it up and took it home and raised it on termite larvae, mealworms and chopped meat. In 1906, the courser was presented to London Zoo and lived there for many years. It was immortalised by the renowned bird artist Herbert Goodchild, whose painting of it was the subject of the coloured plate in the November 1907 issue of the magazine.

Fred notes that working with his brother and Thomas Ayres, he discovered that the Pin-tailed Whydah *Vidua macroura* is a brood-parasite of the Common Waxbill *Estrilda astrild* and has the distinction of having a subspecies of the Red-necked Falcon - *Falco chiquera horsbrughii* - named after him.

He retired from the Army in 1911, shortly after his 40th birthday and, it seems, he and his wife lived for a time in a London hotel and travelled widely, always accompanied by their tame Java Sparrow *Padda oryzivora* named Willie Winkie. In 1913, they bought Tandridge Priory in Oxted, Surrey, a country estate with a large natural lake and he began to amass one of the best collections of waterfowl in Europe. This came to an abrupt end with the outbreak of the First World War and his subsequent death on July 11th 1916, a few days before his 45th birthday.

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## UNUSUAL GREY PARROT NEST

The *Bulletin of the African Bird Club* Vol.18, No.1, pp.81-82, March 2011, includes a report of a pair of Grey Parrots *Psittacus erithacus* nesting under the eaves of a suburban two-storey house in Makerere West, Kampala, Uganda. A photo shows two young in the nest of wood shavings chewed from the rafters supporting the roof. Many Grey Parrots are kept as pets in Kampala and the pair may have escaped or been released but, apart from nesting under the roof the pair, now accompanied by the two young behave, it is said, like wild parrots.

## DON MERTON

Don Merton died on April 10th at his home at Tauranga, New Zealand, after losing his fight against pancreatic cancer. He was aged 72. His name was synonymous with the rescue and reintroduction to islands of species that were fast dying out. He won numerous worldwide accolades for his conservation work and was a laureate of the prestigious UNEP Global 500 Award for his "outstanding contribution to the protection and improvement to the environment."

From an early age he read bird books almost exclusively. When he discovered a Goldfinch's nest he took home the chicks and gave them to his grandmother's canary to rear. His experience of cross-fostering was to be crucially important in preventing the extinction of the Black Robin.

Don's passion for saving New Zealand's endemic birds commenced in his early teenage years and became the driving force of his life. He was decades ahead of his time. Don's involvement with New Zealand's Wildlife Service commenced in 1957, three days after his 18th birthday. At the time the word conservation had scarcely ever been used in the context of the preservation of wildlife. Remarkably harsh conditions had to be endured by Don and his colleagues when working on remote offshore islands. Only the most dedicated could have done his job - and I doubt that anyone else will ever equal Don's long track record in the field. His achievements are without parallel.

He was an iconic figure in the world of bird conservation, almost single-handedly saving from extinction the New Zealand Black Robin and playing a pivotal role in saving the Kakapo, the unique nocturnal, flightless parrot. His work inspired so many people to maintain the battle against the extinction of bird species. He was not only remarkable for what he achieved, but as a modest, kind and friendly man who had time for everyone.

For more than 20 years he was one of my dearest friends: it was a privilege to know him. One of my most precious memories is of watching Hoki the Kakapo on two consecutive moonlit nights with Don in 1994 when only 47 Kakapo were known to survive. No one on earth knew and loved these fascinating parrots as did Don. He devoted so much of his life to ensuring their survival - and today there are 123. Although he had retired officially, he continued to work for conservation - and there was so much more he wanted to do.

Don Merton was a man of unparalleled conservation experience and vision. There will never be another with his immense knowledge and vision, for there will never be another who lived through this critical era in bird conservation and who influenced so much of its success.

**Rosemary Low**

## LORY CONFERENCE

The Lory Conference organised by Ventura Events and Rosemary Low will take place this year on June 12th at Twycross Zoo, Atherstone, Warwickshire CV9 3PX, thanks to the generosity of the zoo which has donated the facilities. Those attending are welcome to arrive from 10.00am onwards and to spend time visiting the zoo prior to the conference, which will commence at 1.00pm in the Napier Room and will continue until approximately 4.00pm.

Powerpoint presentations will be given by Kate Atwell from Bristol Zoo Gardens on management of a walk-through lorikeet aviary; Johnny Wierda from the Netherlands on lories at Loro Parque, Tenerife; Alan Fletcher on lighting for the lory birdroom; and Rosemary Low will talk about the general management of lories.

Those who wish to attend should contact Ashley Palmier of Ventura Events (E-mail: info@venturaevents.org.uk) or Rosemary Low (Tel: 01623 846430). Pre-booked tickets are £8 per person and include entry to the zoo and the conference, plus refreshments. If you do not pre-book you will be asked to pay £8, plus the cost of admission to the zoo. Furthermore, places cannot be guaranteed unless pre-booked. Profits will be donated to the EAZA Ape Campaign.

This annual conference, which has proved very successful in the past, is important in that it allows those attending to meet other lory breeders and purchase and exchange stock. As usual a list will be available of lories that are wanted and those that are for sale.

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## FOR SALE

A block of 10 aviaries, each measuring 8ft x 4ft (approx. 2.4m x 1.2m),  
and covering an area of 40ft x 8ft (approx. 12.1m x 2.4m)

The framework is 3in x 2in (approx. 8.6cm x 5.1cm) tanalized timber  
and where required is clad with ½in (1.3cm) waterproof ply

The front is double-wired lin (2.5cm) square 16g mesh

Already dismantled - buyer to collect

Photos available

Price by negotiation with a generous percentage of the agreed price  
to be donated to the Avicultural Society

For further details please contact:

Peter Stocks

Tel: 01621 772427



## CONTENTS

Saving the Gouldian Finch <i>Erythrura gouldiae</i> by Sarah R. Pryke .....	2
Breeding the White-crowned Robin-Chat <i>Cossypha albicapilla</i> by Gary Bralsford .....	7
Breeding Bewick's Swan <i>Cygnus columbianus bewickii</i> at Flamingo Gardens and Zoological Park by Christopher Marler.....	11
The care and breeding of the Pekin Robin <i>Leiothrix lutea</i> by Christopher Dunn.....	13
The 2010 breeding season at Waddesdon Manor by Ian Edmans.....	23
Breeding the Black-necked Weaver <i>Ploceus nigricollis</i> <i>melanoxanthus</i> at Paignton Zoo Environmental Park by Peter Smallbones.....	28
News of parrots at Weltvogelpark Walsrode by Simon Bruslund and Martin Gaede.....	32
The Grey Singing Finch <i>Serinus leucopygius</i> by John Santegoeds, Huub Vervest and Gaetan Vicentini .....	35
Breeding The Green Jay <i>Cyanocorax yncas</i> at Barcelona Zoo by Miguel Sierra and Rosana Gallego .....	39
News & Views .....	44
Obituary Don Merton.....	48